ATTACHMENT M

REGULATORY CHECKLIST

TITTABAWASSEE RIVER AND UPPER SAGINAW RIVER AND FLOODPLAIN SOILS

TITTABAWASSEE RIVER AND UPPER SAGINAW RIVER AND FLOODPLAIN SOILS REMEDIAL INVESTIGATION WORK PLAN
December 1, 2006

REGULATORY CHECKLIST

Summary of Requirements:
Dow TR Scope of Work (SOW) September 19, 2005

SOW Page	Requirement	Where Requirement is Addressed
1	Be designed to address the factors described in R299.5528(3) "as appropriate to the facility."	Summary of PA 451 Part 201 Technical Requirements for the Remedial Investigation (below)
3	A description of current conditions will summarize existing information on relevant facility history as well as the study site.	Relevant history of the Study Area in general and the Midland Plant in specific are addressed in this RIWP in Section 3.1.5, Anthropogenic Influences, and in Section 3.3, Historical Plant Operations and Waste Management Practices, respectively.
3	Include a preliminary conceptual site model (PCSM), integrating existing information on physical conditions, nature and extent of contaminants, environmental fate and transport, land use, and potential receptors; in coordination with work being done onsite.	Section 4.0 presents a Conceptual Site Model addressing these issues.
3	Discuss data quality objectives (DQOs).	DQOs are presented in Section 5.5.
4	One of the investigation objectives will be to determine if there are continuing sources of dioxins and furans or other applicable PCOIs, to or within the Study Area. The RI will explore the relationships between River sediments and floodplain soils, including investigations of erosional and depositional processes and the extent to which any areas of sediment or floodplain soil may be ongoing sources of contamination to other areas. RI evaluation of the potential for continuing releases will include but not be limited to, the following: -Information from the Flow/Solids Monitoring Study and future investigations will be used to develop a better understanding of the river bed structure and systems dynamics (such as solids transport and scour and deposition patterns). -River hydraulics will be evaluated during flooding events to better understand solids movement during flooding events. -Bank Studies will be performed to evaluate bank stability ad erosion potential.	The overall objectives and deliverables intended to address these requirements of the SOW are included in Section 1.1, Objectives and Deliverables. The relationships between river sediments, including erosional and depositional processes are addressed in Section 4.2.1, In-Channel Sediment and Transport of Chlorinated Furans and Dioxins; in Section 4.2.2, Floodplain Erosion and Deposition; and in Section 4.2.3 River –Floodplain Exchange. Information from the Flow/Solids Monitoring Study is addressed in Sections 3.2.1.3 and 9.1.5 and in Attachment E. Information on river hydraulics will be developed using a multiple lines of evidence approach including geomorphological evaluations (Section 5.2.2) and numerical hydrodynamic modeling (Section 5.2.4) Discussion of Bank Studies performed to date are included in Sections 3.1.7.3 and 9.1.6 and in Attachment C.
4	Provide details regarding specific areas to be investigated as well the proposed analyte lists.	The Study Area is shown in Figure 1-1 and described on page 1-1 of this RIWP. The rationale for parameter section is described in Section 5.1.1 and the December 1,2006 ATS Technical Memorandum included in Attachment G.

Summary of Requirements:
Dow TR Scope of Work (SOW) September 19, 2005

4	Include maps, figures, and standard operating procedures (SOPs) to describe protocols for the collection and evaluation of data.	The protocols for collection and evaluation of data are provided in Section 5 of this RIWP and in the QAPP for the UTR SAP conditionally approved by MDEQ on July 7, 2006, which is included by reference in this RIWP.
5	Include a work plan element for HHRA activities during the RI (the primary RI steps are illustrated in Figure 1.A of the SOW).	The HHRA work planning elements are provided in Volume 2 of this RIWP.
5	Include further identification of potential exposure pathways and DQOs related to the HHRA as appropriate.	Potential exposure pathways and DQOs related to the HHRA are provided in Volume 2 of this RIWP.
4	Identify which potential exposure pathways will be addressed in the RI, including rationale for inclusion/exclusion.	Potential exposure pathways are described in detail in Volume 2 of this RIWP, and summarized in Section 4 of Volume 1 of this RIWP.
5	HHRA component of RIWP.	See Volume 2 of this RIWP.
6	Ecological risk assessment (ERA); outline activities to evaluate the need for an ERA in the Study Area and determination made whether an ERA is needed.	See Volume 2 of this RIWP.
6	Preliminary feasibility study planning; provide work plan element to include remedy considerations.	Section 9.1.14 provides a list of potential corrective actions under consideration to manage risk to human health and the environment.
6	Public participation plan; submit a revised and consolidated plan as part of the RIWP, including incorporation of the “stakeholder” process.	A revised Public Participation Plan is provided in Section 11 of this RIWP.
7	Provide a detailed implementation schedule for the RI.	A detailed schedule is provided in Section 10 of this RIWP.

Summary of Requirements:
State of Michigan PA 451 Part 201

R 299.5528 Section	Requirement	Where Requirement Will Be Addressed
(3)(a)	Define the nature and extent of contamination.	Section 3.2 of this RIWP describes the nature and extent of contamination based on existing data. Further detail of the nature and extent of contamination along the upper 6 miles of the TR will be presented in the February 1, 2007 report on the 2006 *GeoMorph*® Sampling and Analysis work. Section 5 describes the approach for completing the definition of nature and extent of contamination of the Study Area. The updated results will be presented in the Site Characterization Reports.
(3)(b)	Identify risks to the public health, safety, and welfare; the environment; and natural resources including identification of any water wells and wellhead protection zones	Approaches for assessing human health and ecological risk are presented in Volumes 2 and 3 of the TR RIWP. Findings will be presented in the Site Characterization Reports.
(3)(c)	Define relevant exposure pathways.	Volume 2 of this RIWP addresses the current understanding of human health exposure pathways. Ecological pathways and receptors are described in Volume 2. The current understanding of the relevant exposure pathways are presented in the Conceptual Site Model, Section 4 of this RIWP including the Figures referenced in Section 4.2.3. The Site Characterization Reports will refine this understanding and present an updated CSM.
(3)(d)	Identify the following with respect to hazardous substances that are present: (I) amount, (ii) concentration; (iii) hazardous properties; (iv) environmental fate; (v) bioaccumulative properties, (vi) persistence, (vii) mobility, and (viii) physical state.	The amount and concentration of hazardous substances based on existing data is summarized in Section 3.2. Environmental fate and transport processes are discussed in Section 4.2. Section 5 addresses additional data collection to supplement this information. A refined discussion will be included in the Site Characterization Reports.
(3)(e)	Define the following with respect to the physical setting of the facility: (I) geology, (ii) hydrology, (iii) hydrogeology, (iv) depth to saturated zone, (v) hydrologic gradients, (vi) proximity to aquifers, (vii) proximity to surface water, (viii) proximity to floodplains, and (ix) proximity to wetlands.	Section 3 describes the physical setting of the Study Area and addresses these elements as applicable. The Site Characterization Reports will incorporate new information found during the implementation of this RIWP into the description of the site setting.
(3)(f)	Identify current and potential groundwater use.	Current and potential use of on-site and near-site groundwater is being evaluated as part of the on-site corrective action work. Current uses of groundwater and the quality of groundwater in private wells along the Tittabawassee River are discussed in Sections 3.1.1.2 and 3.2.1.4, respectively, of this RIWP.
(3)(g)	Identify and evaluate the source.	Sections 3.3.2 and 4.1 of this RIWP summarize information about potential sources of contamination. Any new information obtained during the implementation of this RIWP will be included in the Site Characterization Reports.
(3)(h)	Evaluate whether hazardous substances at the facility can be reused or recycled.	This pertains to on-site Midland Plant operations and corrective action work, and is being evaluated as part of the on-site corrective action work.

Summary of Requirements:
State of Michigan PA 451 Part 201

R 299.5528 Section	Requirement	Where Requirement Will Be Addressed
(3)(i)	Identify the likelihood of future releases if the hazardous substances remain at the facility.	The likelihood of future releases from the Midland Plant area is being evaluated as part of the on-site corrective action work. The likelihood of future releases of COI from historically deposited contaminants in river sediments and floodplain soils are addressed in Section 4.2 and 5.2.4 of this RIWP.
(3)(j)	Define the extent to which natural or human-made barriers currently contain the hazardous substances and the adequacy of the barriers.	This information is primarily addressed under the on-site corrective action program. Natural and human made barriers along the TR are summarized in Section 3.1.5, Anthropogenic Influences, of this RIWP.
(3)(k)	Identify the impact of any planned demolition activities on conditions at the facility.	This pertains to on-site Midland Plant operations and is being evaluated as part of the on-site corrective action work.
(3)(l)	Determine the extent to which hazardous substances have migrated or are expected to migrate from the area of release.	Section 3.2 describes the currently known extent of contamination. Section 4.2 presents the current understanding of contaminant fate and transport. Additional information will become available in the February 1, 2007 Report on the 2006 *GeoMorph*® sampling and analysis work on the upper 6 miles of the TR. This information will be refined throughout implementation of this RIWP and included in the Site Characterization Reports.
(3)(m)	Evaluate injury to, destruction of, or loss of natural resources related to the release.	Volume 2 of this RIWP addresses ecological risk in the study area due to releases from the Midland Plant. Impacts to natural resources will be addressed in the Site Characterization Reports.
(3)(n)	Determine the contribution of the hazardous substances at the facility to contamination of the air, land, or water.	Section 3.3 describes the history of aqueous and airborne releases from the facility. Section 4.1.1 describes past wastewater and groundwater discharges to the river along with airborne emissions from the Midland Plant.
(3)(o)	Determine legally applicable or relevant and appropriate state and federal requirements.	Legally applicable or relevant and appropriate state and federal requirements will be identified in any corrective action plan based on the findings from the implementation of this RIWP. License Conditions and State requirements governing the implementation of this RIWP are addressed on page 1-1 of the Introduction, Section 1.
(3)(p)	Design sampling and provide rationale for parameter selection.	The general design and rationale for RI sampling, analysis, and data evaluation details are presented in Section 5. A sampling and analysis plan for the upper 6 miles of the TR was conditionally approved by MDEQ on July 7, 2006. Future Sampling and Analysis Plans (SAPs) for the TR and USR will be developed prior to implementation of RI field activities as described in Sections 9.1.12 and 9.2. The rationale for parameter section is described in Section 5.1.1 and the December 1,2006 ATS Technical Memorandum included in Attachment G.
(3)(q)	Describe monitoring well construction.	Monitoring wells will not be installed during this investigation of this Study Area.

Summary of Requirements:
State of Michigan PA 451 Part 201

R 299.5528 Section	Requirement	Where Requirement Will Be Addressed
(3)(r)	Describe and present rationale for any geophysics techniques used in the investigation.	Geophysical techniques will not be used for the investigation of the TRdue to its shallow conditions. Geophysical techniques may be employed for the USR investigation and will be described in detail in the SAP for the USR described in Section 9.2.
(3)(s)	Define sample collection and preparation procedures.	Sample collection and preparation procedures are discussed in Sections 5.4.1 through 5.4.4 and in the UTR SAP QAPP incorporated into this RIWP by reference.
(3)(t)	Identify laboratory or laboratories responsible for sample analysis.	The laboratories responsible for sample analysis are, or will be, identified in the SAP prepared for each segment of work as discussed in Sections 9.1.12 and 9.2 and in the UTR SAP conditionally approved by MDEQ on July 7, 2006.
(3)(u)	Select laboratory methods used to generate remedial investigation data.	Laboratory methods used to generate remedial investigation data are described in the UTR SAP QAPP, which is incorporated into this RIWP by reference.
(3)(v)	Describe any statistical methods used to evaluate laboratory data relative to cleanup criteria.	Statistical methods use to evaluate laboratory data are described in Section 5.4.5 and Attachment I.
(3)(w)	Expand on other matters appropriate to the facility in addition to those described above.	Other matters appropriate to conducting the work in this RIWP are described in considerable detail in Section 2, Background; Section 3, Current Conditions; Section 4, Conceptual Site Model; and Section 5, Focused Investigation Approach.